8-2020

Executive Compensation Incentives Impact on the Tone and Readability of Financial Reports

Xiaoyan Mi
Utah State University

Executive compensation incentives impact on the tone and readability of financial reports.

Abstract

Financial disclosures do not only influence the future reaction of customers, they also imply the financial strategies of the managers of corporations. Through analysis, we find a strong causal relationship between tone and readability of financial disclosures and incentive methods of managers. Controlling executives' pay-performance sensitivity (delta) and other variables, executives with higher sensitivity of executives' wealth to stock volatility (vega) (Coles, Daniel, Naveen, 2004) tend to announce reports with more negative tone and low readability.

1. Introduction

This study examines the relationships between incentive methods of corporate executives and the tone and readability of their firms' financial disclosures, specifically 10-K and 10-Q reports. To study this relationship, we focus on delta and vega as different incentive drivers, where delta represents wealth sensitivity to stock price and vega represents wealth sensitivity to stock volatility (Core and Guay 2002, Coles, Daniel, and Naveen 2006). Controlling for firm characteristics, we find that executives with higher delta tend to issue financial disclosures with more positive tone, less lengthy reports and more tables and exhibits. Executives with higher vega tend to announce financial disclosures with more negative tone, more lengthy reports, and use less tables and exhibits.

Financial disclosures show the financial condition of a firm. They are valuable for investors, creditors and other relevant parties to grasp the financial status, operating results and cash flows of the firm. And then help them analyze the profitability, solvency, investment income, loans and trade. In this paper, we focus on 10-K and 10-Q reports. Registered public companies in the United States are required to submit their financial disclosures yearly (10-K) and quarterly (10-Q) to SEC (U.S. Securities and Exchange Commission). These reports include financial data, management discussion and analysis, and financial statements prepared and audited under GAAP (Generally Accepted Accounting Principles).

Sadique, In and Veeraraghavan (2008) points out that the tone of financial disclosures affects the firm's stock return and volatility: "positive tone positively impacts return and negative tone negatively impacts it... By contrast, we find that tone inversely impacts volatility. Tone's impact on volatility indicates that the tone of firm issued earnings press releases or their news coverage significantly impacts investor uncertainty about future firm performance around the event day."

Additionally, Bai, Dong and Hu (2019) find that the readability of financial disclosures has synchronicity with the stock return with the firm.

But how would these effects be influenced the compensation incentives of a firm? Shin (2003) calls the strategic interaction between CEOs and investor through the releasing of financial disclosures "a disclosure game." In this game, the equilibrium prices will be formalized. This gives chances to CEOs to manage their portfolio by releasing a type of financial disclosures that maximizes their benefit. To achieve this goal, they need to consider how their compensation package is structured with cash, stocks, and options. This structure determines the executives' interests, as represented by executives' pay-performance sensitivity (delta) and sensitivity of executives' wealth to stock volatility (vega). Thus, executives may issue statements intended to increase stock price or stock volatility depending on the executives' delta and vega, respectively.

Our results demonstrate that executives with higher delta tend to issue financial reports with more positive tone and with high readability. This is consistent with the notion that executives who are incentivized to increase stock price will manage the tone and readability of reports in a wealth maximizing manner. Managers with higher vega tend to issue financial reports with more negative tone negative tone and low readability. According to Sadique, In and Veeraraghavan (2008), this would increase stock volatility and, thus, maximize the wealth of high-vega executives.

2. Literature and Hypotheses

2.1: Delta and Vega

Delta and vega are both proxies for wealth sensitivity. As mentioned above, delta is the sensitivity of executive's wealth to stock price, and vega is the sensitivity to stock volatility. Jensen and Murphy (1990) define pay-performance sensitivity as "the dollar change in CEO's wealth associated with a dollar change in the wealth of shareholder". Also, a higher delta means a closer alignment of interests between the executive and shareholders in that higher stock price increases the wealth of both parties. Vega, the sensitivity of executives' wealth to stock return volatility, usually is defined as "the change in the manager's firm specific wealth due to a 1 percent change in the standard deviation of the firm's stock price" (Baker and Martin, 2011). Thus, an executive with a high compensation vega is incentivized to increase their wealth by increase stock volatility. Coles et al. (2006) show this to be the case with regard to risk-taking by mangers. They find CEOs with high vegas take on more risk by investing more in R&D, decreasing firm diversification, investing less in physical assets, and use more leverage.

2.2: Firm Disclosures

There is much extant financial disclosure literature examines the relation between financial disclosures and stock returns, volatility, and the compensation of managers. Largely, there are two forms of disclosure when studying tone and readability, specifically conference calls and written reports.

"Quarterly earnings conference calls have been established as an informative disclosure medium that provides incremental value-relevant information reflected in stock prices and trading volume"

(Borochin et al, 2018). Based on textual analysis of publicly available conference calls for U.S. firms, Borochin et al (2018) find that the tone of conference calls—negative, positive or neutral, will have significant influence on volatility. Measures of call tones are negatively related to volatility, positive tone calms the market and negative tone leads to more uncertainty. Also, Li et al (2014) show that how much the manager speaks in a conference call is positively related to her compensation, i.e. the more the manager speaks, the more she gets paid. This is because the more managers speak, the more knowledgeable the managers and management team are. In addition, the firms that recognize the knowledge-pay relation have higher firm value, because the managers are more knowledgeable and productivity.

For written reports, Henry (2008) suggests that tone of written reports positively related to stock returns. This is consistent with Sadique et al (2008), who also find that tone inversely impacts volatility. The readability of reports is also inversely related to volatility, the higher the readability (easy to read), the lower volatility, the lower the readability (hard to read), the higher volatility (Loughran and McDonald, 2009). Loughran and McDonald (2009) introduce a measure of plain English, which contains at least 6 concepts, comparing to the traditional way FOG, which only contains two components, this seems to be more accurate. By comparing results from other papers, Loughran and McDonald find that "managers clearly changed their writing style to more closely follow the plain English guidelines". An easy-to-read financial report delivers much useful information to investors; hence, it helps investors to understand the market better and be confident, on the contrary, a hard-to-read report confuses investors and make them worry about the future. In a later study, Loughran and McDonald (2014) show that the net file size of the 10K/Q in the SEC EDGAR database is a better measure of readability than the FOG index.

This study extends the previous literature by examining how executives' compensation incentives impact how they write their firm's 10K and 10Q financial reports.

2.3: Hypotheses

Since extant literature provides evidence about the relationship between financial report tone and readability and stock returns and volatility, we examine how incentives to maximize executive wealth is related to the tone and readability of the tone and readability of the firm's financial reports. Given the results in the extant literature and the incentive to maximize wealth, we propose the following hypotheses:

A. Executives with high delta issue 10K/Q reports with more positive language and easier to read.

This hypothesis indicates that executives with compensation portfolios that are very sensitive to stock price will take actions in the financial reporting process to increase stock price.

B. Executives with high vega issue 10K/Q reports with more negative language and less readability.

We propose that executives with compensation portfolios that are very sensitive to stock volatility would like to increase the volatility in order to maximize their wealth.

3. Data

We use firm-specific data from COMPUSTAT- Fundamentals Quarterly, gathered quarterly. The data spans the period from 1987 to 2016. Delta and vega of each executive come from

Lilitha Naveen's website[1]. We consolidate the executives' delta and vega into firm-level variables in two different ways: 1) a simple average, and 2) a weighted average which is weighted by the total wealth of executives. We divide delta and vega by 1000 in order to change the magnitudes to be more interpretable.

For 10K/Q word summary, we use the data from Bill McDonald's web page[2]. Many researchers use Harvard Psychosociological Dictionary, more specifically, the Harvard-IV-4 TagNeg (H4N) to classify if the word is positive or negative. Based on the H4N and actual usage frequency that are most likely associated with a target construct, Loughran and McDonald (2011) develop a new list of words to help identify the tone of financial reports better. For robustness, our analysis uses various measures for tone and readability. They are calculated as follows,

Tone-measure-A = (Number of positive words/Total number of words) – (Number of Negative words/Total number of words)

Tone-measure-B = (Number of negative words - Number of positive words)/ (Number of negative words + Number of positive words)

Readability-C = Ln (Netfilesize)

Readability-D = (Number of Tables + Number of Exhibits)/ Total number of words

We also have other firm-related independent variables as controls the model. There are defined as follows:

ROA = Income before extraordinary items/beginning total assets

SIZE = Ln (market value of equity at the fiscal year end)

[1] https://sites.temple.edu/lnaveen/
[2] https://www3.nd.edu/~mcdonald/

MB = Market-to-book ratio measured at the quarter end

EBITRAT = Operating income before interest, taxes, and depreciation/ beginning total assets

WCAPRAT = Working Capital / beginning total assets

RERAT = Retained earnings/ beginning total assets

DEBTRAT = Total outstanding debt/ beginning total assets

SALESRAT = Total revenue/ beginning total assets

LOSS = 1 if EARN is negative, 0 otherwise

CHANGE_EARN = Percent change in EARN

SALESGROWTH = Change in sales from sales 3 months prior / sales 3 months prior

SUE = (EPS – EPS 3 months ago)/ stock price at the quarter end

4. Results

Table 1 shows the summary statistics of all the variables in the data set including the number of observations, mean, standard deviation, minimum and maximum. This table gives us a brief descriptive of all the variables we have. The mean of tone measure is -0.009, and standard deviation of it is 0.006. The mean of Tone Measure B is -0.395, and the standard deviation is 0.214. The mean of readability c is 11.727 and the standard deviation is 0.984. The mean of readability d is 0.002 and the standard deviation is also 0.002. The mean weighted-average delta and vega are two or three times bigger than the average delta and vega. Because weighted

average delta and vega are calculated by the weight of total wealth, this indicates that executives with larger overall wealth have higher deltas and vegas.

Table 1 Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
tone_measure_a	123,154	-0.009	0.006	-0.087	0.026
tone_measure_b	123,103	-0.395	0.214	-1.000	1.000
readability_c	123,166	11.727	0.984	3.638	16.216
readability_d	123,154	0.002	0.002	0.00E+00	0.273
avg_delta000	118,278	0.369	3.872	0.00E+00	228.046
avg_vega000	120,437	0.053	0.116	0.00E+00	5.322
wtavg_de~000	118,215	1.030	10.594	0.0000014	589.631
wtavg_ve~000	118,215	0.095	0.254	0.00E+00	23.821
roa	123,074	0.009	0.052	-3.855	1.981
mb	122,857	2.926	131.415	-39959.680	12321.370
ebitrat	114,935	0.033	0.035	-1.211	0.696
wcaprat	105,905	0.228	0.211	-2.227	0.960
rerat	119,894	0.052	1.532	-85.085	2.373
debtrat	117,216	0.220	0.200	0.00E+00	4.910
salesrat	115,251	0.275	0.216	-0.203	19.476
size	122,866	7.335	1.622	-1.431	13.348
loss	123,166	0.158	0.365	0.00E+00	1.000
change_earn	122,846	0.000	0.060	-3.746	3.364
sales_growth	121,185	0.476	99.853	-19.088	34652.130
sue	120,438	0.081	10.313	-287.714	2731.884

Table 2 shows the correlations among all the independent variables, we are not surprised to see the average delta (vega) and weighted average delta (vega) are highly correlated. The partial correlations between independent variables and dependent variables are small, however. This table also shows the significance of the correlations, and most are statistically significant at least at the 10% level.

Table 2 Correlation

	tone_measures_a	tone_measures_b	readability_c	readability_d	avg_de~000	avg_ve~000	wt~ta000	wt~ga000	roa	mb	ebitrat	wcaprat	rerat	debtrat	salesrat	size	loss	change_earnales_growth	sue
tone_measures_a	1.0000																		
tone_measures_b	0.8434	1.0000																	
readability_c	-0.3430*	-0.3098*	1.0000																
readability_d	0.1748*	0.1934*	-0.3545*	1.0000															
avg_delta000	-0.0158*	-0.0067*	-0.0006*	0.0071*	1.0000														
avg_vega000	-0.0390*	-0.0270*	0.1163*	-0.0072*	0.2103*	1.0000													
wtavg_de~000	-0.0133*	-0.0076*	0.0032	0.0025	0.9348*	0.3072*	1.0000												
wtavg_ve~000	-0.0308*	-0.0226*	0.0996*	-0.0049	0.1507*	0.9025*	0.2370*	1.0000											
roa	0.1128*	0.0899*	-0.0696*	0.0479*	0.0206*	0.0502*	0.0237*	0.0411*	1.0000										
mb	-0.0011	0.0004	0.0020	-0.0066*	0.0023	0.0045	0.0028	0.0034	-0.0008	1.0000									
ebitrat	0.1649*	0.1401*	-0.1094*	0.0350*	0.0460*	0.0592*	0.0404*	0.0475*	0.5654*	0.0012	1.0000								
wcaprat	-0.0456*	0.0161*	-0.1234*	-0.0106*	0.0132*	-0.0987*	0.0134*	-0.0866*	0.0269*	0.0052	-0.0412*	1.0000							
rerat	0.1059*	0.0691*	-0.0615*	0.0416*	0.0122*	0.0455*	0.0127*	0.0372*	0.2489*	0.0059*	0.2838*	-0.0254*	1.0000						
debtrat	0.0123*	-0.0322*	0.0935*	-0.0164*	-0.0163*	0.0266*	-0.0156*	0.0204*	-0.0890*	-0.0036	-0.0475*	-0.4322*	-0.1087*	1.0000					
salesrat	0.1234*	0.1010*	-0.1539*	0.0257*	-0.0243*	-0.0891*	-0.0227*	-0.0717*	0.1234*	-0.0009	0.2735*	0.0596*	0.0509*	-0.1225*	1.0000				
size	-0.0220*	0.0086*	0.2119*	0.0397*	0.1351*	0.4720*	0.1422*	0.3796*	0.1611*	0.0081*	0.1922*	-0.2683*	0.1520*	0.0663*	-0.1571*	1.0000			
loss	-0.1932*	-0.1487*	0.0978*	-0.0863*	-0.0249*	-0.0761*	-0.0245*	-0.0561*	-0.4252*	0.0016	-0.4424*	0.0499*	-0.2123*	0.0789*	-0.1087*	-0.2569*	1.0000		
change_earn	0.0003	0.0016	-0.0149*	0.0033	0.0001	0.0013	0.0001	0.0012	0.5662*	0.0017	0.1162*	0.0029	-0.0014	0.0019	0.0177*	-0.0003	-0.1215	1.0000	
sales_growth	0.0008	0.0003	0.0013	-0.0018	0.0000	-0.0009	-0.0001	-0.0011	-0.0007	0.0001	-0.0019	-0.0007	-0.0020	0.0048	-0.0031	0.0024	0.0071*	0.0008	1.0000
sue	-0.0068*	-0.0048	0.0094*	-0.0004	-0.0005	-0.0029	-0.0006	-0.0021	0.0731*	0.0000	-0.0011	0.0004	-0.0007	0.0009	-0.0034	-0.0024	-0.0054	0.0689*	0.0000

Table 3 shows the results from the following regression model:

$$TONE\ or\ READABILITY = a + b1(delta) + b2(vega) + b3(Controls) + \varepsilon$$

Consistent with the literature and the mean of the tone measures, the intercepts of the tone regressions indicate the tone of 10K/Q reports tends to be negative.

In Tone Measure A, the coefficient of delta is 0.0000469 and is statistically significant at the 1% level. This result demonstrates a positive relation between delta and the tone of the financial reports (i.e. managers with higher deltas issue more positive reports) and supports Hypothesis A. The coefficient of vega in Tone Measure A is -0.00238 and also is statistically significant at the 1% level. This shows a negative relation between vega and financial report tone (i.e. managers with higher vega issue reports with more negativity) and supports Hypothesis B. In economic terms, one standard deviation increase in delta corresponds to an increase in Tone Measure A of 2.02% while a one standard deviation increase in vega corresponds to a decrease in Tone Measure A of 3.07%. A standard deviation increases in EBIT ratio, return on assets, and LOSS results in changes in Tone Measure A of 2.357%, -3.31%, and 24.577%, respectively. Thus, the magnitude of the impact vega has on tone is similar to variables that should have a strong influence on tone. Delta's impact is still strong, but about half of that of vega.

In Tone Measure B, the coefficient of delta is 0.00107 and is statistically significant at the 1% level. This result demonstrates a positive relation between delta and the tone of the financial reports, for example, managers with higher deltas issue more positive reports, and supports Hypothesis A. The coefficient of vega in Tone Measure B is -0.0872 and also is statistically significant at the 1% level. This shows a negative relation between vega and financial report tone, for example, managers with higher vega issue less positive, and more negative reports, and

supports Hypothesis B. In economic terms, a one standard deviation increase in delta corresponds to an increase in Tone Measure B of 1.05% while a one standard deviation increase in vega corresponds to a decrease in Tone Measure B of 2.56%. A standard deviation increases in EBIT ratio, return on assets, and LOSS results in changes in Tone Measure B of 1.96%, 1.14%, and 20.42%, respectively. Thus, the magnitude of the impact delta has on tone is similar to variables that should have a strong influence on tone. Vega's impact is twice as strong as them.

Models 3 and 4 are the readability measures, in Readability C, the coefficient of delta is -0.0113 and is statistically significant at the 1% level. This result demonstrates a negative relation between delta and the length of the financial reports (i.e. managers with higher deltas issue shorter, and thus, more readable reports). The coefficient of vega in Readability C is 0.159, and it is statistically significant at the 5% level. This shows a positive relation between vega and financial report length (i.e. managers with higher vega issue lengthier, harder-to-read reports). In economic terms, a one standard deviation increase in delta corresponds to a decrease in Readability C of 0.373% while a one standard deviation increase in vega corresponds to an increase in Readability C of 0.157%. A standard deviation increases in EBIT ratio, return on assets, and LOSS results in changes in Readability C of -0.6%, -0.035%, and -6.3%, respectively. Thus, the magnitude of the impact delta has on readability is half strong to EBIT ratio does and ten times stronger than return on assets dose. Vega's impact is still strong, but about half of that of delta.

In Readability D, the coefficient of delta is -0.00000139, and not statistically significant at standard levels. The coefficient of vega in Readability D is -0.000471, and it is statistically significant at the 1% level. This shows a negative relation between vega and financial report readability (i.e. managers with higher vega issue harder-to read reports), which supports

Hypothesis B. However, in economic terms, a one standard deviation increase in delta corresponds to aa increase in Readability D of 0.269% while a one standard deviation increase in vega corresponds to a decrease in Readability D of 2.73%. A standard deviation increases in EBIT ratio, return on assets, and LOSS results in changes in Readability C of 0.162%, 2.86%, and 1.68%, respectively. Thus, the magnitude of the impact vega has on readability is similar to variables that should have a strong influence on readability. Delta's impact is ten times less strong than that of vega.

Table 4 shows the regression results from the model including weighted average delta and vega. All the inferences from the results in Table 3 are the same in Table 4. Although, the economic effects are different.

In Tone Measure A, the coefficient of delta is 0.0000086 and is statistically significant at the 1% level. This result shows a positive relation between delta and the tone of the financial reports (i.e. managers with higher deltas issue more positive reports) and supports Hypothesis A. The coefficient of vega in Tone Measure A is -0.000863 and also is statistically significant at the 1% level. This shows a negative relation between vega and financial report tone (i.e. managers with higher vega issue reports with more negativity) and supports Hypothesis B. In economic terms, one standard deviation increase in delta corresponds to an increase in Tone Measure A of 1.01% while a one standard deviation increase in vega corresponds to a decrease in Tone Measure A of 2.44%. A standard deviation increases in EBIT ratio, return on assets, and LOSS results in changes in Tone Measure A of 2.35%, 3.36%, and -10.87%, respectively. Thus, the magnitude of the impact delta has on tone is similar to variables that should have a strong influence on tone. Vega's impact is still strong, but about half of that of delta.

In Tone Measure B, the coefficient of delta is 0.000146 and is statistically significant at the 1% level. This result demonstrates a positive relation between delta and the tone of the financial reports, for example, managers with higher deltas issue more positive reports, and supports Hypothesis A. The coefficient of vega in Tone Measure B is -0.034 and also is statistically significant at the 1% level. This shows a negative relation between vega and financial report tone, for example, managers with higher vega issue less positive, and more negative reports, and supports Hypothesis B. In economic terms, a one standard deviation increase in delta corresponds to an increase in Tone Measure B of 0.39% while a one standard deviation increase in vega corresponds to a decrease in Tone Measure B of 2.19%. A standard deviation increases in EBIT ratio, return on assets, and LOSS results in changes in Tone Measure B of 1.96%, 1.17%, and -6.17%, respectively. Thus, the magnitude of the impact vega has on tone is similar to variables that should have a strong influence on tone. Delta's impact is ten times less strong than vega.

Models 3 and 4 are the readability measures, in Readability C, the coefficient of delta is -0.00263 and is statistically significant at the 1% level. This result demonstrates a negative relation between delta and the length of the financial reports. The coefficient of vega in Readability C is 0.0892, and it is statistically significant at the 5% level. This shows a positive relation between vega and financial report length. In economic terms, a one standard deviation increase in delta corresponds to a decrease in Readability C of 0.24% while a one standard deviation increase in vega corresponds to a decrease in Readability C of 0.19%. A standard deviation increases in EBIT ratio, return on assets, and LOSS results in changes in Readability C of -0.6%, -0.04%, and -0.81%, respectively. Thus, the magnitude of the impact delta and vega

have on readability is half strong to EBIT ratio does and ten times stronger than return on assets dose.

In Readability D, the coefficient of delta is 0.000000819, but not statistically significant at standard levels. The coefficient of vega in Readability D is -0.000144, and it is statistically significant at the 1% level. This shows a negative relation between vega and financial report readability (i.e. managers with higher vega issue harder-to read reports), which supports Hypothesis B. In economic terms, a one standard deviation increase in delta corresponds to a decrease in Readability D of 0.43% while a one standard deviation increase in vega corresponds to a decrease in Readability D of 1.83%. A standard deviation increases in EBIT ratio, return on assets, and LOSS results in changes in Readability C of 0.17%, 2.89%, and -5.46%, respectively. Thus, the magnitude of the impact vega has on readability is closer to variables that should have a strong influence on readability. Delta's impact is less strong than that of vega.

Table 3 Average Model

VARIABLES	(1) tone_measure_a	(2) tone_measure_b	(3) readability_c	(4) readability_d
avg_delta000	0.0000469***	0.00107***	-0.0113***	-1.39e-06
	(7.92e-06)	(0.000278)	(0.00123)	(2.50e-06)
avg_vega000	-0.00238***	-0.0872***	0.159***	-0.000471***
	(0.000212)	(0.00744)	(0.0329)	(6.71e-05)
roa	0.00573***	0.0867***	-0.0791	0.00110***
	(0.000641)	(0.0225)	(0.0997)	(0.000203)
mb	-5.71e-08	-1.07e-06	1.24e-05	-9.59e-08**
	(1.32e-07)	(4.63e-06)	(2.05e-05)	(4.18e-08)
ebitrat	0.00606***	0.221***	-2.024***	9.23e-05
	(0.000791)	(0.0277)	(0.123)	(0.000250)
wcaprat	-0.00182***	0.0120***	-0.204***	-1.75e-05
	(0.000109)	(0.00383)	(0.0170)	(3.46e-05)
rerat	0.000249***	0.00378***	-0.0281***	1.85e-05***
	(1.31e-05)	(0.000461)	(0.00204)	(4.16e-06)
debtrat	0.000248**	-0.00942**	0.226***	-6.62e-05*
	(0.000111)	(0.00389)	(0.0172)	(3.50e-05)
salesrat	0.00176***	0.0563***	-0.328***	0.000235***
	(0.000102)	(0.00359)	(0.0159)	(3.23e-05)
size	-0.000285***	6.96e-05	0.133***	4.22e-05***
	(1.52e-05)	(0.000534)	(0.00236)	(4.81e-06)
loss	-0.00268***	-0.0667***	0.260***	-0.000298***
	(6.42e-05)	(0.00225)	(0.00998)	(2.03e-05)
change_earn	-0.00556***	-0.117***	0.140**	-0.000641***
	(0.000443)	(0.0155)	(0.0689)	(0.000140)
sales_growth	1.49e-07	2.92e-06	-8.22e-06	-2.14e-08
	(1.70e-07)	(5.98e-06)	(2.65e-05)	(5.39e-08)
sue	-7.12e-06	-0.000108	0.00169**	-1.54e-06
	(5.23e-06)	(0.000183)	(0.000812)	(1.65e-06)
Constant	-0.00693***	-0.403***	10.90***	0.00197***
	(0.000132)	(0.00462)	(0.0205)	(4.17e-05)
Observations	89,507	89,467	89,518	89,507
R-squared	0.062	0.033	0.088	0.010

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4 Weight -average Model

VARIABLES	(1) tone_measure_a	(2) tone_measure_b	(3) readability_c	(4) readability_d
wtavg_delta000	8.60e-06***	0.000146*	-0.00263***	-8.19e-07
	(2.13e-06)	(7.48e-05)	(0.000331)	(6.75e-07)
wtavg_vega000	-0.000863***	-0.0340***	0.0892***	-0.000144***
	(9.63e-05)	(0.00338)	(0.0150)	(3.05e-05)
roa	0.00581***	0.0890***	-0.0813	0.00111***
	(0.000641)	(0.0225)	(0.0997)	(0.000203)
mb	-5.74e-08	-1.09e-06	1.23e-05	-9.61e-08**
	(1.32e-07)	(4.63e-06)	(2.05e-05)	(4.18e-08)
ebitrat	0.00605***	0.221***	-2.023***	9.53e-05
	(0.000791)	(0.0277)	(0.123)	(0.000250)
wcaprat	-0.00184***	0.0117***	-0.203***	-2.02e-05
	(0.000109)	(0.00384)	(0.0170)	(3.46e-05)
rerat	0.000249***	0.00379***	-0.0280***	1.87e-05***
	(1.31e-05)	(0.000461)	(0.00204)	(4.16e-06)
debtrat	0.000248**	-0.00937**	0.228***	-6.39e-05*
	(0.000111)	(0.00389)	(0.0172)	(3.51e-05)
salesrat	0.00176***	0.0564***	-0.328***	0.000235***
	(0.000102)	(0.00359)	(0.0159)	(3.24e-05)
size	-0.000309***	-0.000683	0.132***	3.52e-05***
	(1.47e-05)	(0.000516)	(0.00228)	(4.65e-06)
loss	-0.00268***	-0.0668***	0.259***	-0.000299***
	(6.42e-05)	(0.00225)	(0.00998)	(2.03e-05)
change_earn	-0.00564***	-0.119***	0.141**	-0.000653***
	(0.000443)	(0.0156)	(0.0689)	(0.000140)
sales_growth	1.51e-07	2.97e-06	-8.18e-06	-2.10e-08
	(1.70e-07)	(5.98e-06)	(2.65e-05)	(5.39e-08)
sue	-4.69e-06	-7.04e-05	0.00164**	-1.45e-06
	(5.25e-06)	(0.000184)	(0.000815)	(1.66e-06)
Constant	-0.00678***	-0.398***	10.90***	0.00201***
	(0.000130)	(0.00455)	(0.0202)	(4.11e-05)
Observations	89,463	89,423	89,474	89,463
R-squared	0.061	0.032	0.087	0.010

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

5. Conclusion

We examine how executive compensation incentives impact on financial report disclosures by investigating the relation between executives' pay-performance sensitivity (delta) and sensitivity of executives' wealth to stock volatility (vega) (Coles, Daniel, Naveen, 2004) and the tone and readability of 10K/Q reports.

Through statistical analyses, we find support for our hypotheses that delta positively impacts report tone and readability while vega has a negative impact on tone readability. We find that executives with higher delta tend to announce financial disclosures with more positive words relative to negative words and overall less lengthy reports. Executives with higher vega tend to announce financial disclosures with more negative tone, more lengthy reports, and use less tables and exhibits.

This study contributes to the literature by showing the connection between the compensation scheme and incentives of managing tone and readability in financial disclosures. Similar to the description by Shin (2003), this is an interesting game between CEOs and investors.

Reference

Bai, Xuelian., Dong, Yi., and Hu, Nan. (2019) Financial report readability and stock return synchronicity. *Applied Economics* (2019), Vol.51, NO.4, 346-363.

Borochin, Paul A., Cicon, James, E., R. Delisle, Jared, S., and Price, McKay. (2008). The effects of conference call tones on market perceptions of value uncertainty. *Journal of Financial Markets*, 1-17

Baker, H, Kent., and Martin, Gerald, S. (2011). *Capital structure and corporate financing decisions: theory, evidence and practice.* John Wiley& Sons, Inc., Hoboken, New Jersey.

Coles, Jeffrey, L., Daniel, Naveen, D., and Naveen, Lalitha. (2006). Managerial incentives and risk-taking. *Journal of Financial Economics.*

https://doi.org/10.1016/j.jfineco.2004.09.004

Core, J. and Guay, W. (2002), Estimating the Value of Employee Stock Option Portfolios and Their Sensitivities to Price and Volatility. *Journal of Accounting Research*, 40: 613-630. doi:10.1111/1475-679X.00064

Henry, Elaine. (October 2008). Are investors influenced by how earnings press releases are written? *Journal of Business Communication*, Vol 45, NO.4, 363-407.

Li, Feng., Minnis, Michael., Nagar, Venky., and Rajan, Madhav. (2014). Knowledge, compensation, and firm value: An empirical analysis of firm communication. *Journal of Accounting and Economics.*

http://dx.doi.org/10.1016/j.jacceco.2014.06.003

Loughran, Tim., and McDonald, Bill. (February, 2011). Why is a liability not a liability? Textual analysis, dictionaries, and 10-Ks. *The Journal of Finance*, Vol. LXVI, NO,1.

Loughran, Tim., and McDonald, Bill. (November, 2014). Regulation and financial disclosure: The impact of plain English. Journal of Regulatory Economics volume 45, pages94–113(2014).

Michael C. Jensen & Kevin J. Murphy. (April 1990). Performance Pay and Top-Management Incentives. *Journal of Political Economy,* Vol. 98, No. 2, pp. 225-264

Sadique, S., In, Francis., Veeraraghhvan, Madhu., (2008). The impact of spin and tone on stock returns and volatility: Evidence from firm-issued earnings announcements and the related press coverage. Available at SSRN:

https://ssrn.com/abstract=1121231 or http://dx.doi.org/10.2139/ssrn.1121231

Shin, Hyun, Song. (January 2003). Disclosures and asset returns. *Econometrica*, Vol. 71, NO.1, 105-133